```
TTCTATCGAT TGAATTCCCC GGGGATCCTC TAGAGATCCC TCGACCTCGA      50

CCCACGCGTC CGCCGGGCGG CGGCTTTGGA TTTTGGGGGG GCGGGGACCA     100

GCTGCGCGGC GGCACC   ATG TTC CTA GCC ACT CTG TAC TTC        140
                    Met Phe Leu Ala Thr Leu Tyr Phe
                      1               5

GCG CTG CCA CTC CTG GAT TTG CTG ATG TCC GCC GAG GTG        179
Ala Leu Pro Leu Leu Asp Leu Leu Met Ser Ala Glu Val
     10                  15                  20

AGT GGT GGA GAC CGT CTG GAC TGT GTG AAA GCC AGC GAT        218
Ser Gly Gly Asp Arg Leu Asp Cys Val Lys Ala Ser Asp
             25                  30

CAG TGC CTG AAG GAA CAG AGC TGC AGC ACC AAG TAC CGC        257
Gln Cys Leu Lys Glu Gln Ser Cys Ser Thr Lys Tyr Arg
 35                  40                  45

ACA CTA AGG CAG TGC GTG GCG GGC AAG GAA ACC AAC TTC        296
Thr Leu Arg Gln Cys Val Ala Gly Lys Glu Thr Asn Phe
         50                  55                  60

AGC CTG ACA TCC GGC CTT GAG GCC AAG GAT GAG TGC CGT        335
Ser Leu Thr Ser Gly Leu Glu Ala Lys Asp Glu Cys Arg
                65                  70

AGC GCC ATG GAG GCC TTG AAG CAG AAG TCT CTG TAC AAC        374
Ser Ala Met Glu Ala Leu Lys Gln Lys Ser Leu Tyr Asn
     75                  80                  85

TGC CGC TGC AAG CGG GGC ATG AAG AAA GAG AAG AAT TGT        413
Cys Arg Cys Lys Arg Gly Met Lys Lys Glu Lys Asn Cys
             90                  95

CTG CGT ATC TAC TGG AGC ATG TAC CAG AGC CTG CAG GGA        452
Leu Arg Ile Tyr Trp Ser Met Tyr Gln Ser Leu Gln Gly
100                 105                 110

AAT GAC CTC CTG GAA GAT TCC CCG TAT GAG CCG GTT AAC        491
Asn Asp Leu Leu Glu Asp Ser Pro Tyr Glu Pro Val Asn
         115                 120                 125
```

FIG. 1A

AGC AGG TTG TCA GAT ATA TTC CGG GCA GTC CCG TTC ATA 530
Ser Arg Leu Ser Asp Ile Phe Arg Ala Val Pro Phe Ile
130 135

TCA GAT GTT TTC CAG CAA GTG GAA CAC ATT TCC AAA GGG 569
Ser Asp Val Phe Gln Gln Val Glu His Ile Ser Lys Gly
140 145 150

AAC AAC TGC CTG GAC GCA GCC AAG GCC TGC AAC CTG GAC 608
Asn Asn Cys Leu Asp Ala Ala Lys Ala Cys Asn Leu Asp
155 160

GAC ACC TGT AAG AAG TAC AGG TCG GCC TAC ATC ACC CCC 647
Asp Thr Cys Lys Lys Tyr Arg Ser Ala Tyr Ile Thr Pro
165 170 175

TGC ACC ACC AGC ATG TCC AAC GAG GTC TGC AAC CGC CGT 686
Cys Thr Thr Ser Met Ser Asn Glu Val Cys Asn Arg Arg
180 185 190

AAG TGC CAC AAG GCC CTC AGG CAG TTC TTC GAC AAG GTT 725
Lys Cys His Lys Ala Leu Arg Gln Phe Phe Asp Lys Val
195 200

CCG GCC AAG CAC AGC TAC GGG ATG CTC TTC TGC TCC TGC 764
Pro Ala Lys His Ser Tyr Gly Met Leu Phe Cys Ser Cys
205 210 215

CGG GAC ATC GCC TGC ACC GAG CGG CGG CGA CAG ACT ATC 803
Arg Asp Ile Ala Cys Thr Glu Arg Arg Arg Gln Thr Ile
220 225

GTC CCC GTG TGC TCC TAT GAA GAA CGA GAG AGG CCC AAC 842
Val Pro Val Cys Ser Tyr Glu Glu Arg Glu Arg Pro Asn
230 235 240

TGC CTG AGT CTG CAA GAC TCC TGC AAG ACC AAT TAT ATC 881
Cys Leu Ser Leu Gln Asp Ser Cys Lys Thr Asn Tyr Ile
245 250 255

TGC AGA TCT CGC CTT GCA GAT TTT TTT ACC AAC TGC CAG 920
Cys Arg Ser Arg Leu Ala Asp Phe Phe Thr Asn Cys Gln
260 265

FIG. 1B

```
CCA GAG TCA AGG TCT GTC AGC AAC TGT CTT AAG GAG AAC        959
Pro Glu Ser Arg Ser Val Ser Asn Cys Leu Lys Glu Asn
    270                 275                 280

TAC GCA GAC TGC CTC CTG GCC TAC TCG GGA CTG ATT GGC        998
Tyr Ala Asp Cys Leu Leu Ala Tyr Ser Gly Leu Ile Gly
            285                 290

ACA GTC ATG ACT CCC AAC TAC GTA GAC TCC AGC AGC CTC        1037
Thr Val Met Thr Pro Asn Tyr Val Asp Ser Ser Ser Leu
295                 300                 305

AGC GTG GCA CCA TGG TGT GAC TGC AGC AAC AGC GGC AAT        1076
Ser Val Ala Pro Trp Cys Asp Cys Ser Asn Ser Gly Asn
        310                 315                 320

GAC CTG GAA GAC TGC TTG AAA TTT CTG AAT TTT TTT AAG        1115
Asp Leu Glu Asp Cys Leu Lys Phe Leu Asn Phe Phe Lys
                325                 330

GAC AAT ACT TGT CTC AAA AAT GCA ATT CAA GCC TTT GGC        1154
Asp Asn Thr Cys Leu Lys Asn Ala Ile Gln Ala Phe Gly
    335                 340                 345

AAT GGC TCA GAT GTG ACC ATG TGG CAG CCA GCC CCT CCA        1193
Asn Gly Ser Asp Val Thr Met Trp Gln Pro Ala Pro Pro
            350                 355

GTC CAG ACC ACC ACT GCC ACC ACT ACC ACT GCC TTC CGG        1232
Val Gln Thr Thr Thr Ala Thr Thr Thr Thr Ala Phe Arg
360                 365                 370

GTC AAG AAC AAG CCT CTG GGG CCA GCA GGG TCT GAG AAT        1271
Val Lys Asn Lys Pro Leu Gly Pro Ala Gly Ser Glu Asn
        375                 380                 385

GAG ATC CCC ACA CAC GTT TTA CCA CCC TGT GCG AAT TTG        1310
Glu Ile Pro Thr His Val Leu Pro Pro Cys Ala Asn Leu
                390                 395

CAG GCT CAG AAG CTG AAA TCC AAT GTG TCG GGT AGC ACA        1349
Gln Ala Gln Lys Leu Lys Ser Asn Val Ser Gly Ser Thr
    400                 405                 410
```

FIG. 1C

```
CAC CTC TGT CTT TCT GAT AGT GAT TTC GGA AAG GAT GGT          1388
His Leu Cys Leu Ser Asp Ser Asp Phe Gly Lys Asp Gly
            415                 420

CTC GCT GGT GCC TCC AGC CAC ATA ACC ACA AAA TCA ATG          1427
Leu Ala Gly Ala Ser Ser His Ile Thr Thr Lys Ser Met
425                 430                 435

GCT GCT CCT CCC AGC TGC AGT CTG AGC TCA CTG CCG GTG          1466
Ala Ala Pro Pro Ser Cys Ser Leu Ser Ser Leu Pro Val
        440                 445                 450

CTG ATG CTC ACC GCC CTT GCT GCC CTG TTA TCT GTA TCG          1505
Leu Met Leu Thr Ala Leu Ala Ala Leu Leu Ser Val Ser
                455                 460

TTG GCA GAA ACG TCG TAGCTGCATC CGGGAAAACA GTATGAAAAG         1550
Leu Ala Glu Thr Ser
    465         468

ACAAAAGAGA ACCAAGTATT CTGTCCCTGT CCTCTTGTAT ATCTGAAAAT       1600

CCAGTTTTAA AAGCTCCGTT GAGAAGCAGT TTCACCCAAC TGGAACTCTT       1650

TCCTTGTTTT TAAGAAAGCT TGTGGCCCTC AGGGGCTTCT GTTGAAGAAC       1700

TGCTACAGGG CTAATTCCAA ACCCATAAGG CTCTGGGGCG TGGTGCGGCT       1750

TAAGGGGACC ATTTGCACCA TGTAAAGCAA GCTGGGCTTA TCATGTGTTT       1800

GATGGTGAGG ATGGTAGTGG TGATGATGAT GGTAATTTTA ACAGCTTGAA       1850

CCCTGTTCTC TCTACTGGTT AGGAACAGGA GATACTATTG ATAAAGATTC       1900

TTCCATGTCT TACTCAGCAG CATTGCCTTC TGAAGACAGG CCCGCAGCCT       1950

AGTGTGAATG ACAAGTGGAG GTTGGCCTCA AGAGTGGACT TGGCAGACTC       2000

TACCTTGTAG TAATGTTCAC CTTTCCGTGT ATGGTCTCCA CAGAGTGTTT       2050

ATGTATTTAC AGACTGTTCT GTGATCCCCC AACAACAACA ACCACAAATT       2100

CCTTGGTCAC CTCCAAATGT AACCGGTCCT TTAGCCCAGT AGAGGAGGGT       2150

GGGTGTGGCC CTGGCACAGC TCCCGGATTG TTGATGGGCA CTCTCCTGAG       2200
```

FIG. 1D

CTTTGCTTGA GTGAGAAGCT GAATGTAGCT GAAAATCAAC TCTTCTTACA 2250

CTTAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA 2300

AAAAAAAAAA AAAAGGTTTA GGGATAACAG GGTAATGCGG CCGCGTCGAC 2350

CTGCAGAAGC TTGGCCGCCA TGGCCCAA 2378

FIG. 1E

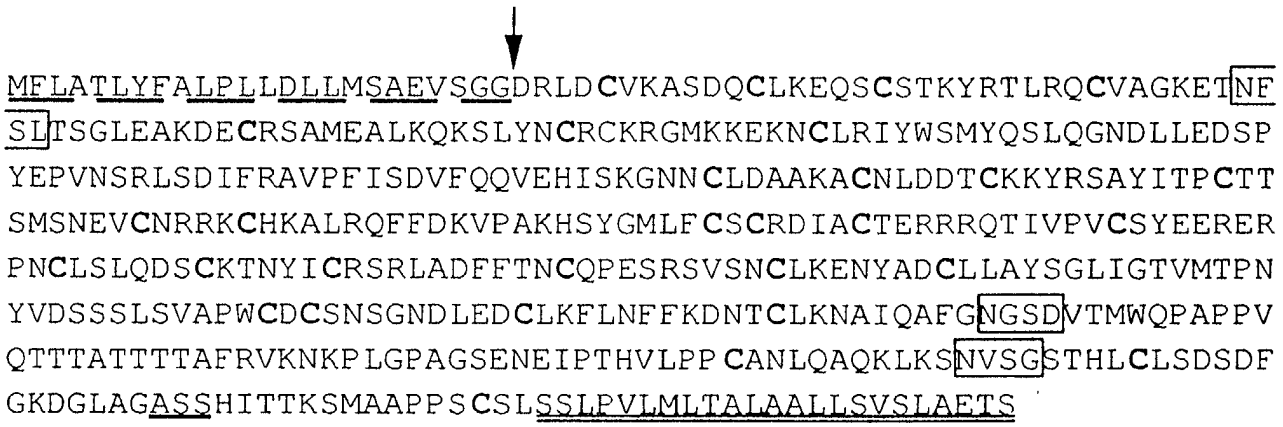

MFLATLYFALPLLDLLMSAEVSGGDRLDCVKASDQCLKEQSCSTKYRTLRQCVAGKETNF
SLTSGLEAKDECRSAMEALKQKSLYNCRCKRGMKKEKNCLRIYWSMYQSLQGNDLLEDSP
YEPVNSRLSDIFRAVPFISDVFQQVEHISKGNNCLDAAKACNLDDTCKKYRSAYITPCTT
SMSNEVCNRRKCHKALRQFFDKVPAKHSYGMLFCSCRDIACTERRRQTIVPVCSYEERER
PNCLSLQDSCKTNYICRSRLADFFTNCQPESRSVSNCLKENYADCLLAYSGLIGTVMTPN
YVDSSSLSVAPWCDCSNSGNDLEDCLKFLNFFKDNTCLKNAIQAFGNGSDVTMWQPAPPV
QTTTATTTTAFRVKNKPLGPAGSENEIPTHVLPPCANLQAQKLKSNVSGSTHLCLSDSDF
GKDGLAGASSHITTKSMAAPPSCSLSSLPVLMLTALAALLSVSLAETS

FIG. 2

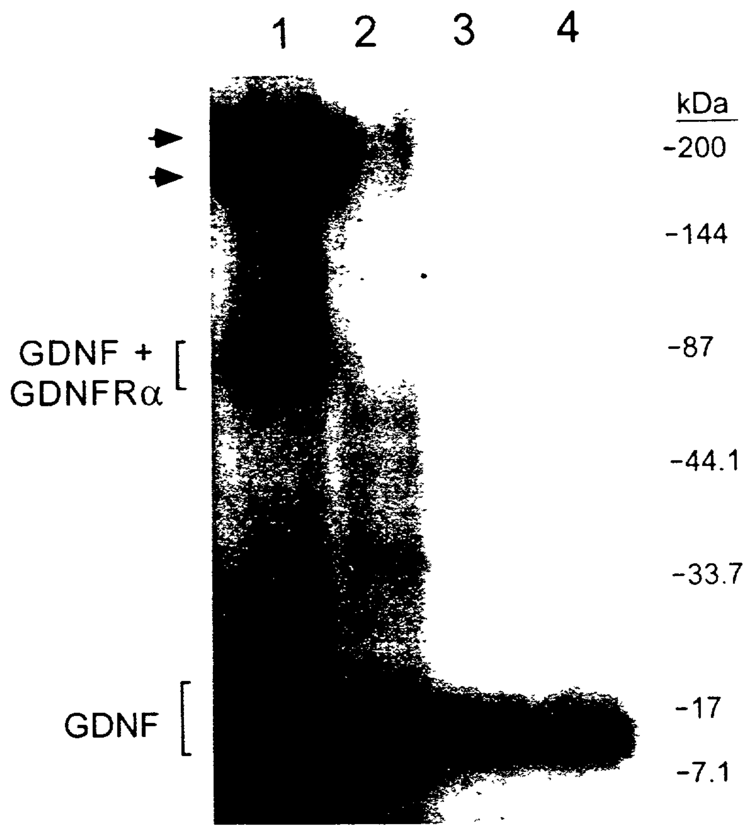


FIG. 3

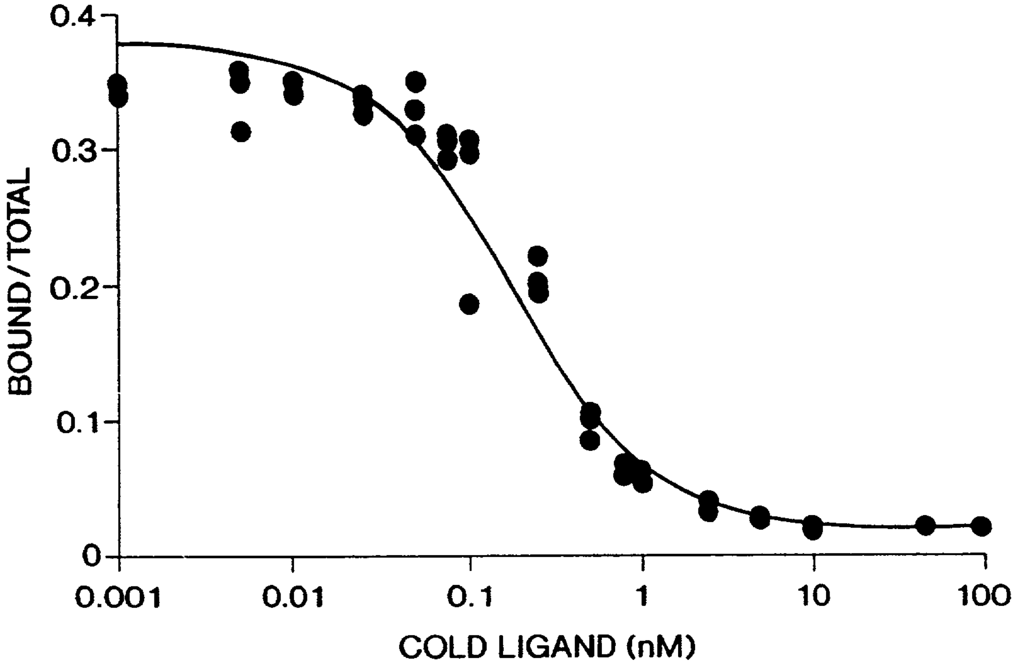

0.4
0.3
0.2
0.1
0
BOUND / TOTAL
0.001
0.01
0.1
1
10
100
COLD LIGAND (nM)

FIG. 4A

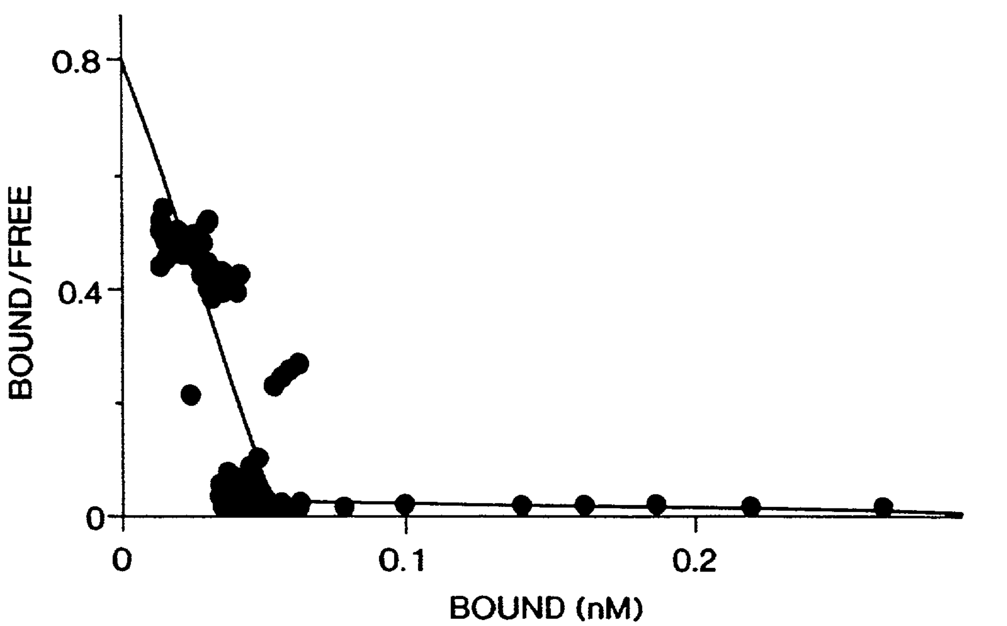

0.8
0.4
0
BOUND / FREE
0
0.1
0.2
BOUND (nM)

FIG. 4B

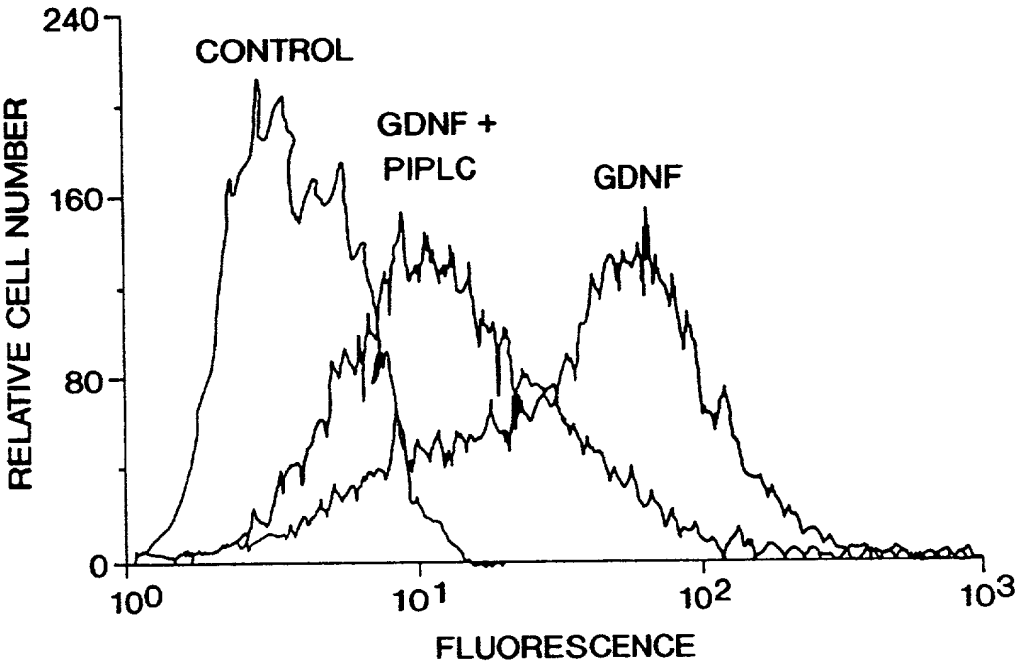

240
160
80
0
RELATIVE CELL NUMBER
CONTROL
GDNF +
PIPLC
GDNF
10^0
10^1
10^2
10^3
FLUORESCENCE

FIG. 5

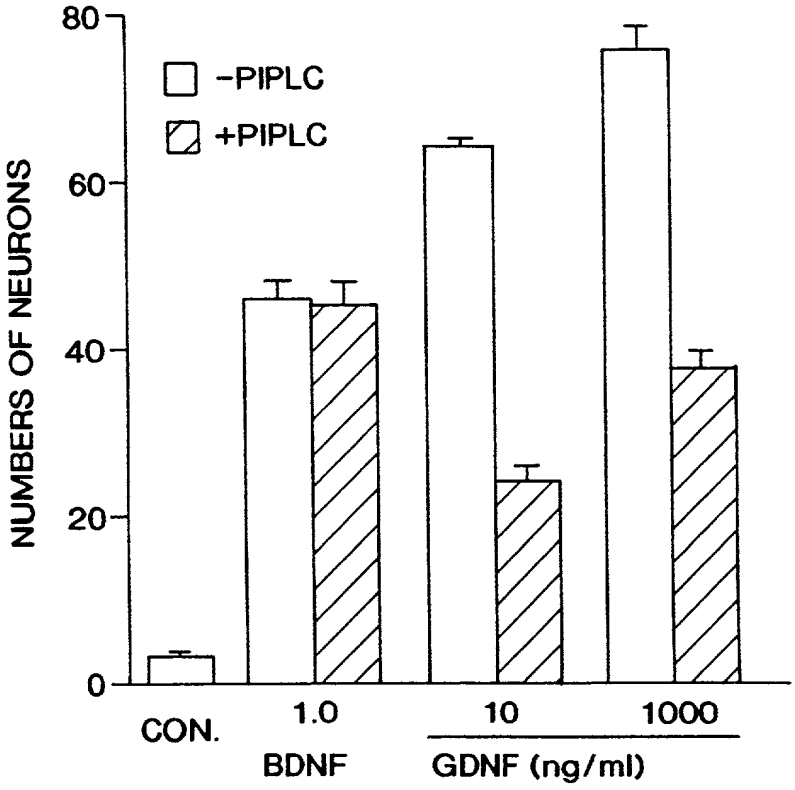

80
60
40
20
0
NUMBERS OF NEURONS
-PIPLC
+PIPLC
CON.
1.0
10
1000
BDNF
GDNF (ng/ml)

FIG. 6

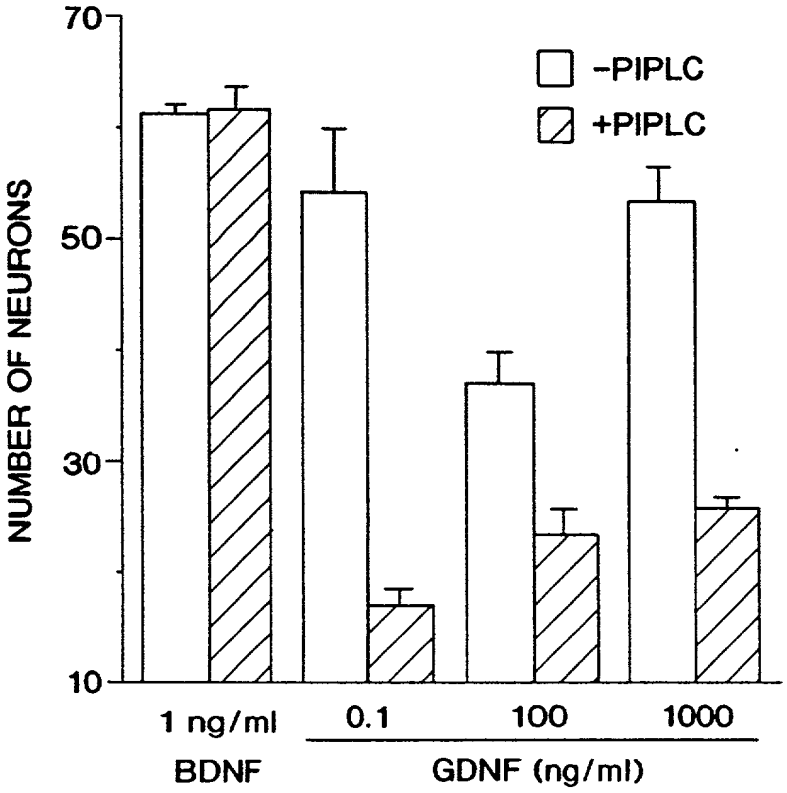

70
50
30
10
NUMBER OF NEURONS
-PIPLC
+PIPLC
1 ng/ml
BDNF
0.1
100
1000
GDNF (ng/ml)

FIG. 7

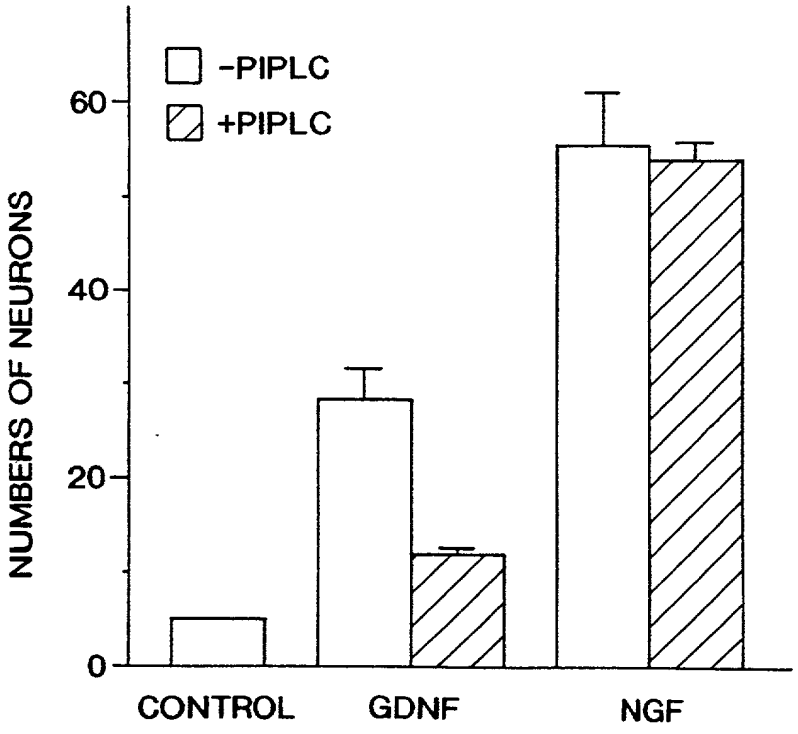

60
40
20
0
NUMBERS OF NEURONS
-PIPLC
+PIPLC
CONTROL
GDNF
NGF

FIG. 8

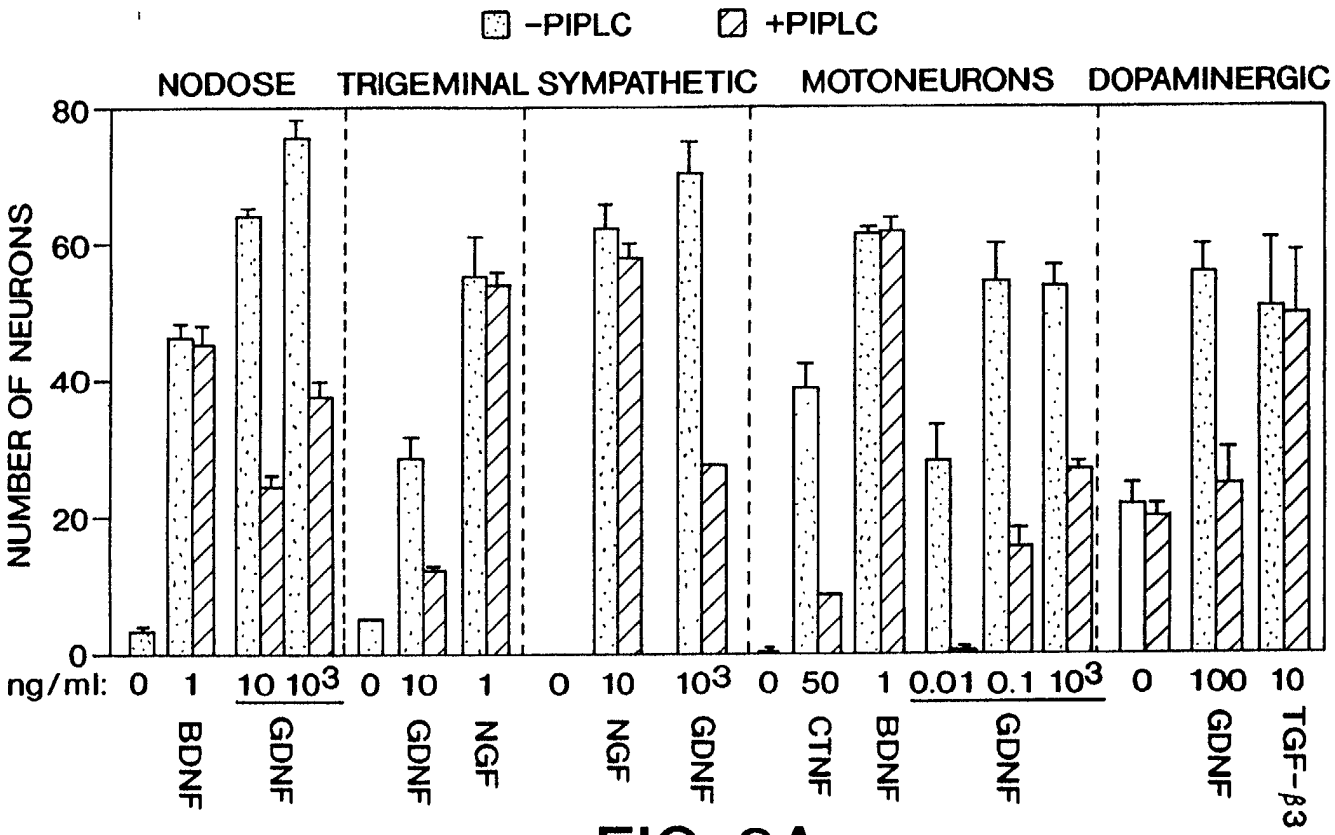
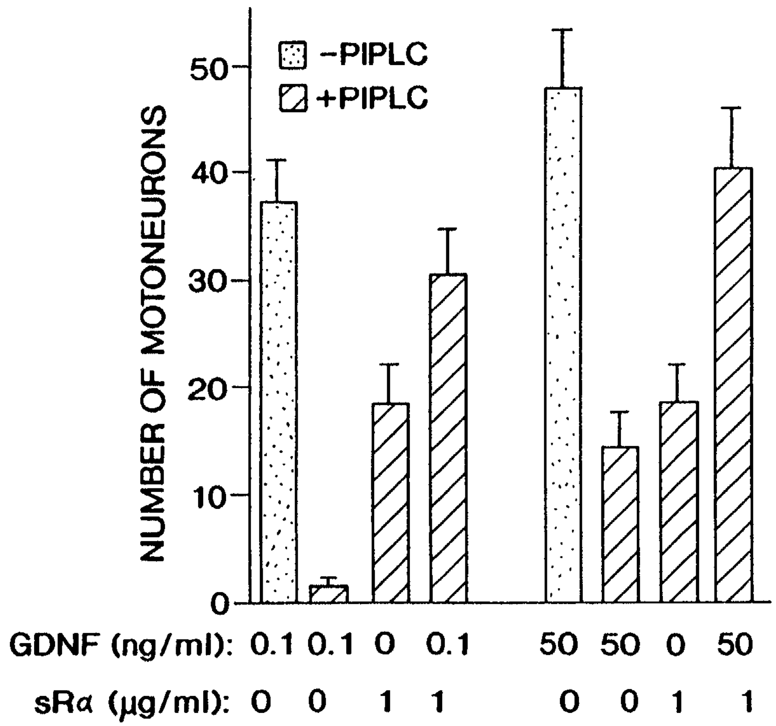
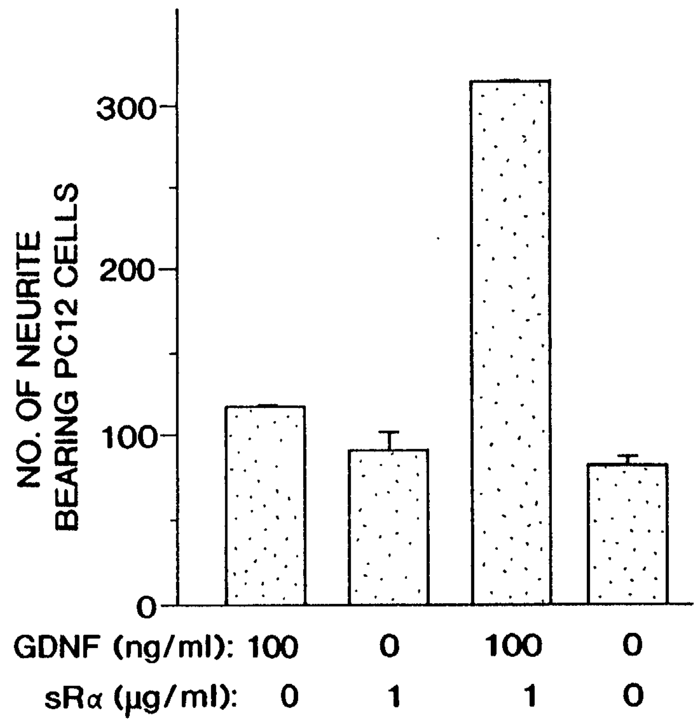


FIG. 9A



NUMBER OF MOTONEURONS
50
40
30
20
10
0
−PIPLC
+PIPLC
GDNF (ng/ml): 0.1 0.1 0 0.1 50 50 0 50
sRα (μg/ml): 0 0 1 1 0 0 1 1

FIG. 9B



NO. OF NEURITE BEARING PC12 CELLS
300
200
100
0
GDNF (ng/ml): 100 0 100 0
sRα (μg/ml): 0 1 1 0

FIG. 9C

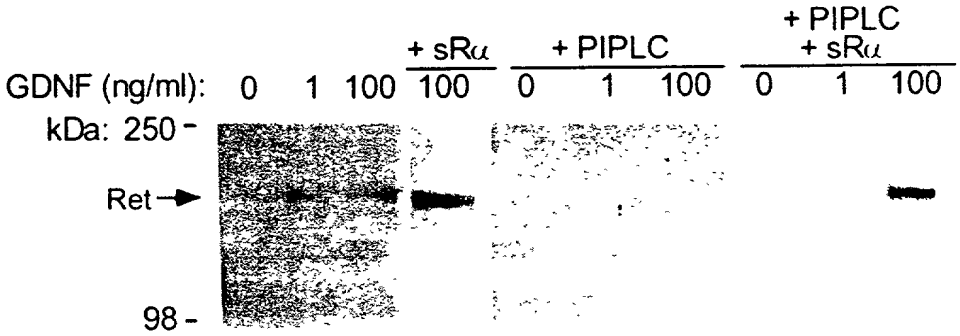


FIG. 10A

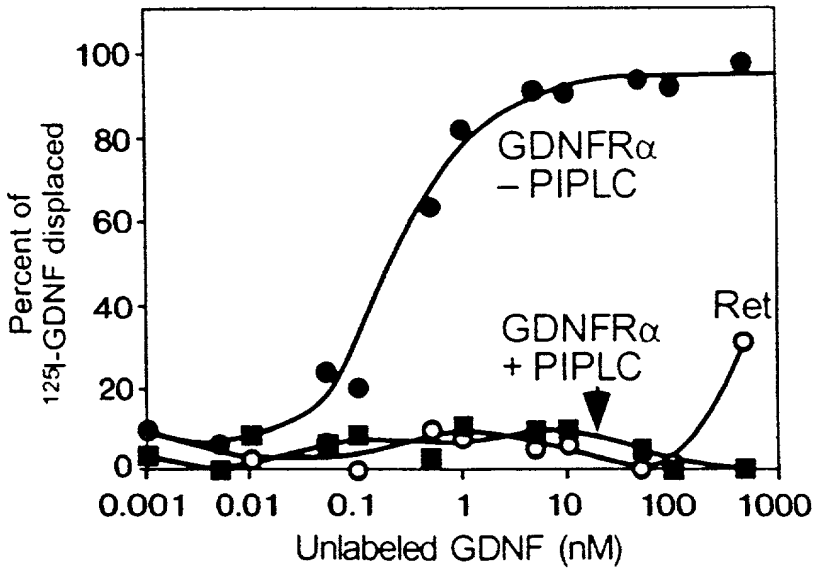


FIG. 10B

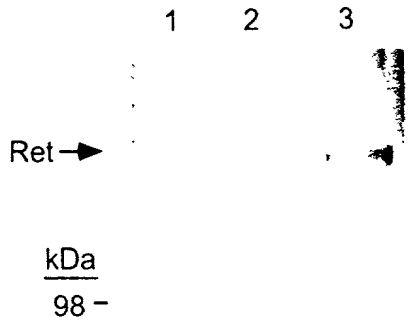


FIG. 10C

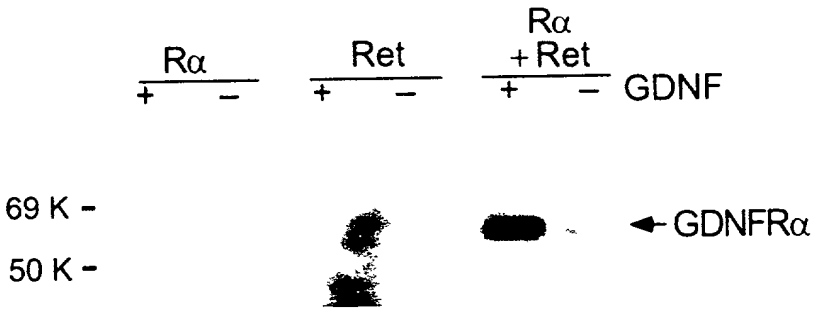


FIG. 10D